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UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

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UNITED STATES OF AMERICA,

Plaintiff,

v.

ERIC ROMERO-LOBATO,

Defendant.

Case No. 3:18-cr-00049-LRH-CBC

ORDER

Defendant Eric Romero-Lobato has filed a motion to preclude the testimony of Steven Johnson, a supervising criminalist in the Forensic Science Division of the Washoe County Sheriff's Office. (ECF No 51). On April 23, 2019, the Court held a *Daubert* evidentiary hearing concerning Johnson's qualifications and the field of firearm and tool mark examination. (ECF No. 65). For the reasons stated below, the Court denies defendant's motion to preclude and qualifies Johnson as competent to testify in the field of firearm and tool mark identification.

I. Factual Background

Defendant has been indicted with seven felonies stemming out of two separate incidents that occurred approximately two months apart. On March 4, 2018, defendant is alleged to have participated in an attempted armed robbery at the Aguitas Bar and Grill in Sparks, Nevada. (ECF No. 11 at 2). During the attempted robbery, one of two robbers, alleged to be defendant, discharged a firearm (a Taurus PT111 G2) into the ceiling of the bar while making his escape. Stemming from that incident, defendant was charged with conspiracy to commit Hobbs Act robbery, attempted Hobbs Act robbery, discharging a firearm during a crime of violence, and being a felon in

1 possession of a firearm. (*Id.* at 2–3). Neither of the two suspects involved in the Aguitas robbery
2 was apprehended following the robbery. Approximately two months later on May 14, defendant
3 allegedly carjacked an individual at gunpoint while she was cleaning her vehicle at a Reno-area
4 carwash. Later that night, police officers located the vehicle, a 2001 GMC Yukon, and
5 subsequently observed defendant enter it and drive away. Defendant subsequently led officers on
6 a high-speed chase, which ended with defendant crashing the Yukon. Defendant was forcibly
7 removed from the crashed vehicle by the officers, and during their investigation of the vehicle, the
8 officers found a Taurus PT111 G2 handgun on the front passenger’s seat. The carjacking victim
9 was subsequently brought to the scene of the accident and positively identified defendant as her
10 attacker. Stemming from this incident, defendant was charged with carjacking, using or
11 brandishing a firearm during a crime of violence, and being a felon in possession of a firearm. (*Id.*
12 at 3–4).

13 On January 11, 2019, the government gave notice that it planned to call Johnson to testify
14 as an expert witness in the field of firearm and tool mark analysis. (ECF No. 47 at 2). Johnson
15 would testify, *inter alia*, that the Taurus handgun found in the stolen Yukon following the police
16 chase is the same gun that was used to fire a round into the ceiling of Aguitas Bar and Grill. (*Id.*)
17 Defendant objected to qualifying Johnson as an expert (ECF No. 51), and the Court subsequently
18 held a *Daubert* hearing to ascertain both his qualifications and the validity of his field of firearm
19 and tool mark examination. (ECF No. 65). The Court heard testimony from Johnson on his
20 background, training, and experience. He also testified regarding the process by which he linked
21 the Aguitas bullet and the Taurus handgun found near defendant, commonly known as the
22 Association of Firearm and Tool Mark Examiners method (“AFTE method”). Johnson also
23 testified at length regarding recent developments and studies within the field prompted by two
24 critical studies: a 2009 report from the National Research Council of the National Academy of
25 Sciences (“NAS Report”) and a 2016 report by the President’s Council of Advisors on Science
26 and Technology (“PCAST Report”). Following the hearing, the Court took the matter under
27 advisement.

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II. Legal Standard

Federal Rule of Evidence 702 governs the admissibility of expert testimony in federal courts. It provides:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Rule 702 requires expert testimony to be both “relevant and reliable.” *U.S. v. Vallejo*, 237 F.3d 1008, 1019 (9th Cir. 2001). The relevancy hurdle is a low one to meet: it simply requires that the evidence “logically advance a material aspect of the party’s case.” *Cooper v. Brown*, 510 F.3d 870, 942 (9th Cir. 2007). To determine if the principles and methods utilized are reliable, five factors have traditionally been used: (1) whether a theory or technique can be tested; (2) whether it has been subjected to peer review and publication; (3) the known or potential error rate of the theory or technique; (4) whether there are standards controlling the technique’s operation; and (5) whether the theory or technique enjoys general acceptance within the relevant scientific community. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 592–94 (1993) (hereinafter “*Daubert*”). The reliability inquiry is not concerned with whether the expert’s ultimate conclusions are “correct,” but rather with the “soundness of his methodology.” *Primiano v. Cook*, 598 F.3d 558, 564 (9th Cir. 2010).

III. Discussion

Defendant attacks the AFTE method on two separate grounds. First, the defense points to the critical NAS and PCAST Reports as evidence that “firearms analysis” is not scientifically valid and fails to meet the requisite threshold for admission under *Daubert* and Federal Rule of Evidence 702. (ECF No. 51 at 8). Second, the defense asserts that the government’s notice of intent to call Johnson should be stricken because it does not provide sufficient detail about the basis behind Johnson’s conclusions or even what those conclusions are. (*Id.* at 8–9). The latter issue was resolved through the *Daubert* hearing, as Johnson testified at length regarding his methodology and conclusions and was subject to substantial cross examination. Therefore, the Court will restrict

1 its discussion to whether the AFTE methodology meets the relevance and reliability requirements
2 of *Daubert*.

3 **A. The Field of Firearm and Tool Mark Examination**

4 For most of the twentieth century, courts generally allowed firearm examiners to testify,
5 without many restrictions, that a bullet found at the scene of a crime was fired from a particular
6 gun. David H. Kaye, *Firearm-Mark Evidence: Looking Back and Looking Ahead*, 68 CASE W.
7 RES. L. REV. 723, 725–26 (2018). Some experts testified that that their judgments were not subject
8 to any error rate and were essentially infallible, and others opined that it was merely possible for
9 a particular bullet to have been fired by a particular gun. *Id.* But since the turn of the century, some
10 federal courts have begun to question the AFTE methodology. In *U.S. v. Green*, the District of
11 Massachusetts conducted a detailed inquiry into the AFTE method before ultimately concluding
12 that the proposed expert’s toolmark identification testimony was admissible under *Daubert*. 405
13 F.Supp.2d 104 (D. Mass. 2005). Although the court allowed the testimony into evidence, it limited
14 the expert to only reporting his observations of the similarities and differences between the
15 toolmarks. *Id.* at 124. He was prohibited from concluding that a spent shell casing came from the
16 gun at issue in the case or even that it was likely that it did. *Id.* As Professor Kaye noted in his
17 article, no other federal court has placed such severe restrictions on a firearm examiner’s
18 testimony, and the Court has not found any such cases in the year since the article was published.

19 But that is not to say that every federal court has allowed firearm examiners to have
20 unfettered discretion in opining about their conclusions. In *U.S. v. Monteiro*, decided a year after
21 *Green*, a different judge in the District of Massachusetts allowed a firearm examiner to testify with
22 a “reasonable degree of certainty” that a particular gun fired two separate cartridges, but the
23 examiner was prohibited from tying his conclusion to an exact statistical certainty. 407 F.Supp.2d
24 351, 355 (D. Mass. 2006). Three years later in *U.S. v. Glynn*, a judge in the Southern District of
25 New York reached a similar conclusion. The court held that a firearm examiner could testify, but
26 he was limited to opining that it was “more likely than not” that a particular gun fired a particular
27 round; like the expert in *Monteiro*, he was prohibited from giving any degree of certainty to the
28 validity of his conclusion. 578 F.Supp.2d 567, 574 (S.D.N.Y. 2009). In 2015, a judge in the Eastern

1 District of New York reached the same conclusion as the *Monteiro* court, holding that a firearm
2 examiner could testify, but he could not testify that he was “100% certain” that his conclusions
3 were correct. *U.S. v. Ashburn*, 88 F.Supp.3d 239, 249 (E.D.N.Y. 2015). In each of these cases,
4 including *Green*, the expert wishing to testify reached his conclusion through AFTE’s
5 methodology.

6 The cases surveyed by the Court indicate that some federal courts have recently become
7 more hesitant to automatically accept expert testimony derived from the AFTE method. While no
8 federal court (at least to the Court’s knowledge) has found the AFTE method to be unreliable under
9 *Daubert*, several have placed limitations on the manner in which the expert is allowed to testify.
10 The general consensus is that firearm examiners should not testify that their conclusions are
11 infallible or not subject to any rate of error, nor should they arbitrarily give a statistical probability
12 for the accuracy of their conclusions. Several courts have also prohibited a firearm examiner from
13 asserting that a particular bullet or shell casing could only have been discharged from a particular
14 gun to the exclusion of all other guns in the world. These restrictions are in accord with guidelines
15 issued by the Department of Justice for its own federal firearm examiners which went into effect
16 in January 2019. (ECF No. 51-8 at 4). But it is also important to note that the courts that imposed
17 limitations on firearm and toolmark expert testimony were the exception rather than the rule. David
18 H. Kaye, *Firearm-Mark Evidence: Looking Back and Looking Ahead*, 68 CASE W. RES. L. REV.
19 723, 734 (2018). Many courts have continued to allow unfettered testimony from firearm
20 examiners who have utilized the AFTE method.

21 Defendant rests much of his challenge on the NAS and PCAST Reports, so a brief
22 explanation of both reports is necessary. The NAS Report, released in 2009, concluded that
23 “[s]ufficient studies have not been done to understand the reliability and repeatability” of firearm
24 and toolmark examination methods. (ECF No. 51-6 at 9). The Report’s main issue with the AFTE
25 method was that it did not provide a specific protocol for determining a match between a shell
26 casing or bullet and a specific firearm. (*Id.* at 10). Instead, examiners were to rely on their training
27 and experience to determine if there was a “sufficient agreement” (i.e. match) between the mark
28 patterns on the casing or bullet and the firearm’s barrel. (*Id.*) During the *Daubert* hearing, Johnson

1 testified about his field's response to the NAS Report, pointing to a 2013 study from Miami-Dade
2 County ("Miami-Dade Study"). The Miami-Dade Study was conducted in direct response to the
3 NAS Report and was designed as a blind study to test the potential error rate for matching fired
4 bullets to specific guns.¹ It examined ten consecutively manufactured barrels from the same
5 manufacturer (Glock) and bullets fired from them to determine if firearm examiners (165 in total)
6 could accurately match the bullets to the barrel. 150 blind test examination kits were sent to
7 forensics laboratories across the United States. The Miami-Dade Study found a potential error rate
8 of less than 1.2% and an error rate by the participants of approximately 0.007%. The Study
9 concluded that "a trained firearm and tool mark examiner with two years of training, regardless of
10 experience, will correctly identify same gun evidence."

11 In addition to the NAS Report, the defense also heavily relies on the PCAST Report in
12 defendant's motion to preclude. That report, published in September 2016, concluded that there
13 was only one study done that "was appropriately designed to test foundational validity and estimate
14 reliability," the Ames Laboratory Study ("Ames Study"). (ECF No. 51-7 at 18). The Ames Study,
15 which was reported in 2014, reported a false-positive rate of 1.52%.² The PCAST Report refused
16 to consider any study that did not meet its strict criteria; to be considered, a study must be a "black
17 box" study, meaning that it must be completely blind for the participants. The committee behind
18 the report rejected studies that it did not consider to be blind, such as where the examiners knew
19 that a bullet or spent casing matched one of the barrels included with the test kit. This is in contrast
20 to studies where it is not possible for an examiner to correctly match a bullet to a barrel through
21 process of elimination. The PCAST Report did not reach a conclusion as to whether the ATFE
22 method was reliable or not because there was only one study available that met its criteria. (*Id.* at
23 19). It ultimately stated that whether firearms analysis should be deemed dismissible based on the
24 "current evidence" is a decision that should be left to the courts. (*Id.*) Following its publication,

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26 ¹ THOMAS G. FADUL, JR., ET AL., AN EMPIRICAL STUDY TO IMPROVE THE SCIENTIFIC FOUNDATION OF
27 FORENSIC FIREARM AND TOOL MARK IDENTIFICATION UTILIZING CONSECUTIVELY MANUFACTURED
28 GLOCK EBIS BARRELS WITH THE SAME EBIS PATTERN (2013), *available at*
<https://www.ncjrs.gov/pdffiles1/nij/grants/244232.pdf>.

² DAVID P. BALDWIN, ET AL., A STUDY OF FALSE-POSITIVE AND FALSE-NEGATIVE ERROR RATES IN
CARTRIDGE CASE COMPARISONS (2014), *available at* <https://www.ncjrs.gov/pdffiles1/nij/249874.pdf>.

1 the PCAST Report was criticized by a number of entities, including the DOJ, FBI, ATF, and
2 AFTE. (*See generally* ECF No. 58). Some of their issues with the Report were its lack of
3 transparency and consistency in determining which studies met its strict criteria and which did not
4 and its failure to consult with any experts in the firearm and tool mark examination field.³

5 **B. *Daubert* Analysis**

6 Turning to the Court’s analysis under *Daubert*, Johnson’s testimony will only be
7 admissible if it is both relevant and reliable. *U.S. v. Vallejo*, 237 F.3d 1008, 1019 (9th Cir. 2001).
8 There is no question that Johnson’s testimony is relevant. Evidence is relevant if it has “any
9 tendency to make the existence of any fact that is of consequence to the determination of the action
10 more [or less] probable than it would be without the evidence.” Fed. R. Evid. 401. At trial, as he
11 did during the *Daubert* hearing, Johnson is expected to testify that the bullet fired into the ceiling
12 of the Aguitas bar came from the same gun that was found following the high-speed police chase
13 and car crash. As defense counsel stated at the *Daubert* hearing, the identity of the Aguitas shooter
14 is one of the main factual issues that must be resolved at trial. Johnson’s testimony, if presumed to
15 be true and accurate, makes it more probable that defendant was the Aguitas shooter. It is therefore
16 relevant to the matter at hand.

17 Turning now to reliability, the first *Daubert* reliability factor asks whether a theory or
18 technique can be tested. *Daubert*, 509 U.S. 579, 592–94 (1993). As the Supreme Court stated in
19 *Daubert*, the testability element is a “key question” in determining whether expert testimony
20 should be admitted. *Id.* at 593. There is little doubt that the AFTE method of identifying firearms
21 satisfies this *Daubert* element. In addition to the Miami-Dade and Ames Laboratory studies
22 discussed in the previous section, several federal courts have held that the AFTE method can be
23 and has been frequently tested. *See, e.g., U.S. v. Ashburn*, 88 F.Supp.3d 239, 245 (E.D.N.Y. 2015)

24
25 ³ There are very few federal court decisions discussing the PCAST Report in regard to the admissibility of
26 opinions derived from the AFTE method. In one 2016 order that was not published and does not appear to
27 be readily available, the Northern District of Illinois considered the PCAST Report in response to the
28 defendant’s motion in limine to preclude expert testimony. Aliza B. Kaplan & Janis C. Puracal, *It’s Not a Match: Why the Law Can’t Let Go of Junk Science*, 81 ALB. L. REV. 895, 930 (2017). Based on excerpts of the order, that court appeared to misinterpret the report’s final conclusion, stating that the report “does not dispute the accuracy or acceptance of firearm toolmark analysis within the courts.” *Id.* That court ultimately allowed the firearm expert to testify.

1 (“The AFTE methodology has been repeatedly tested”); *U.S. v. Otero*, 849 F.Supp.2d 425, 432–
2 33 (D.N.J. 2012) (citing numerous journals articles and studies exploring the AFTE method).
3 Johnson himself testified that he has participated in controlled tests, wherein he was tasked with
4 determining whether a particular gun fired a particular bullet, and that he has not made an incorrect
5 identification in any of those tests. Although both the NAS and PCAST Reports were critical of
6 the ATFE method because of its inherent subjectivity, their criticisms do not affect whether the
7 technique they criticize has been repeatedly tested. The fact that numerous studies have been
8 conducted testing the validity and accuracy of the AFTE method weighs in favor of admitting
9 Johnson’s testimony.

10 The second *Daubert* reliability factor asks whether the technique has been subjected to peer
11 review and publication. *Daubert*, 509 U.S. 579, 593–94 (1993). Although this factor is relevant, it
12 is not dispositive, as many valid scientific techniques are relatively new and have not yet been
13 subject to peer review. *Id.* During the Court’s *Daubert* hearing, Johnson testified that AFTE
14 publishes its own journal, the appropriately named *AFTE Journal*, which is subject to peer review.⁴
15 According to AFTE’s website, the *AFTE Journal*, “is dedicated to the sharing of information,
16 techniques, and procedures,” and the papers published within “are reviewed for scientific validity,
17 logical reasoning, and sound methodology.”⁵ Several published federal decisions have also
18 commented on the *AFTE Journal*, with all finding that it meets the *Daubert* peer review element.
19 *See U.S. v. Ashburn*, 88 F.Supp.3d 239, 245–46 (E.D.N.Y. 2015) (finding that the AFTE method
20 has been subjected to peer review through the *AFTE Journal*); *U.S. v. Otero*, 849 F.Supp.2d 425,
21 433 (D.N.J. 2012) (describing the *AFTE Journal*’s peer reviewing process and finding that the
22 methodology has been subjected to peer review); *U.S. v. Taylor*, 663 F.Supp.2d 1170, 1176
23 (D.N.M. 2009) (finding that the *AFTE* method has been subjected to peer review through the *AFTE*
24 *Journal* and two articles submitted by the government in a peer-reviewed journal about the
25 methodology); *U.S. v. Monteiro*, 407 F.Supp.2d 351, 366–67 (D. Mass. 2006) (describing the

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27 ⁴ *Peer Review Process*, THE ASSOCIATION OF FIREARM AND TOOL MARK EXAMINERS, <https://afte.org/afte-journal/afte-journal-peer-review-process> (last visited May 1, 2019).

28 ⁵ *What is the Journal?*, THE ASSOCIATION OF FIREARM AND TOOL MARK EXAMINERS, <https://afte.org/afte-journal/what-is-the-journal> (last visited May 1, 2019).

1 *AFTE Journal's* peer reviewing process and finding that it meets the *Daubert* peer review
2 element). And of course, the NAS and PCAST Reports themselves constitute peer review despite
3 the unfavorable view the two reports have of the AFTE method. The peer review and publication
4 factor therefore weighs in favor of admissibility.

5 The third *Daubert* reliability factor asks whether the technique has a known or potential
6 rate of error. *Daubert*, 509 U.S. 579, 594 (1993). One federal court has previously held that “it is
7 not possible” to calculate an absolute error rate for firearms analysis because “the process is so
8 subjective and qualitative.” *U.S. v. Monteiro*, 407 F.Supp.2d 351, 367 (D. Mass. 2006). Even so,
9 the studies cited by Johnson in his testimony and by other federal courts examining the issue
10 universally report a low error rate for the AFTE method. For instance, the Miami-Dade Study
11 reported a potential error rate of less than 1.2% and an error rate by the participants of 0.07%.
12 Similarly, the Ames Study reported a false positive rate of 1.52%. Other federal courts examining
13 the AFTE method's rate of error have likewise found it to be low. *See U.S. v. Ashburn*, 88
14 F.Supp.3d 239, 246 (E.D.N.Y. 2015) (“the error rate, to the extent it can be measured, appears to
15 be low, weighing in favor of admission”); *U.S. v. Otero*, 849 F.Supp.2d 425, 433–34 (D.N.J. 2012)
16 (summarizing several studies indicating a low error rate); *U.S. v. Taylor*, 663 F.Supp.2d 1170,
17 1177 (D.N.M. 2009) (“this number [less than 1%] suggests that the error rate is quite low”);
18 *Monteiro*, 407 F.Supp.2d at 367–68 (summarizing relevant studies and finding that the known
19 error rate is not “unacceptably high”).

20 Although it is not defendant's burden to submit evidence showing that the AFTE method
21 has a high error rate, the defense has not submitted any studies to counter the studies proffered by
22 Johnson and the government, which show that the error rate is very low. Instead, the defense relies
23 upon the NAS and PCAST Reports, seemingly content to rest on their conclusions (or rather their
24 non-conclusions in the case of the latter). While the Court is cognizant of the PCAST Report's
25 repeated criticisms regarding the lack of true black box tests, the Court declines to adopt such a
26 strict requirement for which studies are proper and which are not. *Daubert* does not mandate such
27 a prerequisite for a technique to satisfy its error rate element. Therefore, this factor too weighs in
28 favor of admissibility.

1 The fourth *Daubert* factor asks whether there are standards that control the technique's
2 operation. *Daubert*, 509 U.S. 579, 594 (1993). The defense focused a large portion of defendant's
3 argument at the hearing to this issue, repeatedly arguing that the AFTE method was not "scientific"
4 because the results could not be objectively obtained or quantified with a numerical probability.
5 This argument is premised on a faulty reading of *Daubert* and Federal Rule of Evidence 702. The
6 mere fact that an expert's opinion is derived from subjective methodology does not render it
7 unreliable. *See U.S. v. Ashburn*, 88 F.Supp.3d 239, 246–47 (E.D.N.Y. 2015) ("the subjectivity of
8 a methodology is not fatal under Rule 702 and *Daubert*"); *Cohen v. Trump*, 2016 WL 4543481, at
9 *11 (S.D. Cal. Aug. 29, 2016) ("subjective opinions based on an expert's experience are proper").
10 Federal Rule of Evidence 702 inherently allows for an expert with sufficient knowledge,
11 experience, or training to testify about a particular subject matter. It does not impose a requirement
12 that the expert must reach a conclusion via an objective set of criteria or that he be able to quantify
13 his opinion with a statistical probability. Such requirements would, in most circumstances, exclude
14 psychologists, physicians, and lawyers from testifying as expert witnesses. Of course, a litigant
15 would be hard pressed to make a good faith argument that the methods used by mainstream medical
16 and legal experts are unreliable under *Daubert*.

17 As to the AFTE method itself, a main criticism of both the NAS and PCAST Reports is
18 that firearm examiners do not reach their conclusions via objective criteria. Instead, using their
19 training and experience, examiners use a high-powered microscope to determine if there is
20 "sufficient agreement" between the "unique surface contours" of two toolmarks.⁶ "Sufficient
21 agreement" is defined as follows:

22 This "sufficient agreement" is related to the significant duplication of random
23 toolmarks as evidence by the correspondence of a pattern or combination of
24 patterns of surface contours. Significance is determined by the comparative
25 examination of two or more sets of surface contour patterns comprised of individual
26 peaks, ridges and furrows. Specifically, the relative height or depth, width,
27 curvature and spatial relationship of the individual peaks, ridges and furrows within
28 one set of surface contours are defined and compared to the corresponding features
in the second set of surface contours. Agreement is significant when the agreement

⁶ *AFTE Theory of Identification*, THE ASSOCIATION OF FIREARM AND TOOL MARK EXAMINERS, available
at <https://afte.org/about-us/what-is-afte/afte-theory-of-identification> (last visited May 1, 2019).

1 in individual characteristics exceeds the best agreement demonstrated between
2 toolmarks known to have been produced by different tools and is consistent with
3 agreement demonstrated by toolmarks known to have been produced by the same
4 tool. The statement that “sufficient agreement” exists between two toolmarks
means that the agreement of individual characteristics is of a quantity and quality
that the likelihood another tool could have made the mark is so remote as to be
considered a practical impossibility.⁷

5 The AFTE itself recognizes that this method is inherently subjective.⁸ Other courts have made this
6 observation as well. *See, e.g., U.S. v. Ashburn*, 88 F.Supp.3d 239, 246–47 (E.D.N.Y. 2015)
7 (finding that the AFTE methodology lacks “clearly defined, objective standards”); *U.S. v. Taylor*,
8 663 F.Supp.2d 1170, 1177–78 (D.N.M. 2009); *U.S. v. Monteiro*, 407 F.Supp.2d 351, 371 (D. Mass.
9 2006). *U.S. v. Sebborn*, 2012 WL 5989813, at *5 (E.D.N.Y. Nov. 30, 2012) (“the standards
10 employed by examiners invite subjectivity”). With the AFTE method, matching two tool marks
11 essentially comes down to the examiner’s subjective judgment based on his training, experience,
12 and knowledge of firearms. This factor weighs against admissibility.

13 Johnson testified that there is an objective method of identification used by some firearm
14 examiners called the consecutive matching striae (“CMS”) method. The CMS method, which is
15 more commonly used in the western half of the country, was first introduced in 1959 by Al Biasotti
16 in the *Journal of Forensic Sciences*. DANIEL L. CLARK, ET AL., NAT’L RESEARCH COUNCIL OF THE
17 NAT’L ACADEMIES, COMMITTEE TO ASSESS THE FEASIBILITY, ACCURACY, AND TECHNICAL
18 CAPABILITY OF A NATIONAL BALLISTICS DATABASE 65 (2008). The CMS method was later
19 modified and refined to establish a “conservative quantitative criteria for identification” when
20 subclass characteristics are ruled out:

21 (1) In three-dimensional toolmarks when at least two different groups of at least
22 three consecutive matching striae appear in the same relative position, or one group
of six consecutive striae are in agreement in an evidence toolmark to a test
toolmark.

23 (2) In two-dimensional toolmarks when at least two groups of at least five
24 consecutive matching striae appear in the same relative position, or one group of
25 eight consecutive matching striae are in agreement in an evidence toolmark
26 compared to a test toolmark.

27
28 ⁷ *Id.*

⁸ *Id.*

1 *Id.* at 66. In other words, if an examiner utilizing the CMS method observes two or more sets of
2 three or more consecutive matching markings on a bullet or shell casing, then he can conclude that
3 there is a match between the discharged bullet and firearm. The CMS method, standing alone,
4 qualifies as an objective standard under *Daubert*. Johnson testified that in the instant case, he used
5 CMS in addition to the commonly used “sufficient agreement” ATFE criteria; in his practice, he
6 utilizes CMS after already determining a match, and that CMS only adds additional support to his
7 final conclusion. While the CMS method has been peer reviewed, published in scientific journals,
8 and tested, it is not routinely used by firearm examiners across the country. The lack of uniform
9 adoption and the fact that Johnson does not use it as his primary method of identification means
10 that the CMS method cannot, in the Court’s view, transform the subjective factor in the AFTE
11 method to an objective one. The CMS method does, however, offer some objective validation to
12 the AFTE Method.

13 The fifth and final *Daubert* factor asks whether the theory or technique enjoys general
14 acceptance within the relevant community. *Daubert*, 509 U.S. 579, 594 (1993). The AFTE method
15 certainly satisfies this element. *See U.S. v. Ashburn*, 88 F.Supp.3d 239, 247 (E.D.N.Y. 2015) (“The
16 AFTE theory...has been widely accepted in the forensic science community”); *U.S. v. Otero*, 849
17 F.Supp.2d 425, 435 (D.N.J. 2012) (noting that even courts that have been critical of the AFTE
18 method have concluded that it is “widely accepted among examiners as reliable”) (citing *U.S. v.*
19 *Taylor*, 663 F.Supp.2d 1170, 1178 (D.N.M. 2009); *U.S. v. Monteiro*, 407 F.Supp.2d 351, 372 (D.
20 Mass. 2006); *U.S. v. Green*, 405 F.Supp.2d 104, 122–24 (D. Mass. 2005)). The fact that the NAS
21 and PCAST Reports reject (or in the latter’s case, fails to draw a conclusion about) the AFTE
22 method is relevant but not dispositive. This *Daubert* factor is designed to prohibit techniques that
23 have “only minimal support” within the relevant community. *Daubert*, 509 U.S. at 594.
24 Techniques do not need to have universal acceptance before they are allowed to be presented
25 before a court. *See Daubert*, 509 U.S. at 588–89 (noting how the *Frye* “general acceptance”
26 requirement is nowhere to be found in Federal Rule of Evidence 702). Moreover, it is unclear if
27 the PCAST Report would even constitute criticism from the “relevant community” because the
28 committee behind the report did not include any members of the forensic ballistics community

1 (ECF No. 58-2 at 2). The acceptance factor therefore weighs in favor of admitting Johnson's
2 testimony.

3 Balancing the *Daubert* factors, the Court finds that Johnson's testimony derived from the
4 AFTE method is reliable and therefore admissible. The only factor that does not support the
5 admission of the testimony is the lack of objective criteria governing the application of the AFTE
6 method. But this lack of objective criteria is countered by the method's relatively low rate of error,
7 widespread acceptance in the scientific community, testability, and frequent publication in
8 scientific journals. The balance of the factors therefore weighs strongly in favor of the admission
9 of Johnson's testimony. The Court also notes that the defense has not cited to a single case where
10 a federal court has completely prohibited firearms identification testimony on the basis that it fails
11 the *Daubert* reliability analysis. The lack of such authority indicates to the Court that defendant's
12 request to exclude Johnson's testimony wholesale is unprecedented, and when such a request is
13 made, a defendant must make a remarkable argument supported by remarkable evidence.
14 Defendant has not done so here.

15 **C. Johnson's Competency to Testify at Trial**

16 Having found that the AFTE method is relevant and reliable, the Court now turns to
17 whether Johnson is competent to testify in the field. The government has provided Johnson's CV,
18 which indicates that he holds a Bachelor of Science degree in chemistry from the University of
19 Nevada, Reno. (ECF 55-1 at 6). Johnson has worked in the Washoe County Sheriff's Office since
20 2010, and he has been supervising the firearms and toolmark section since November 2015. (*Id.*)
21 From December 2012 to March 2015, he trained at the California Department of Justice's Firearms
22 and Toolmark Examiner Academy and at the Washoe County Sheriff's Office, Forensic Science
23 Division. (*Id.* at 6–7). He has also attended related conferences and workshops in the latter half of
24 2015, 2016, 2017, and 2018. (*Id.* at 6–7). During his training, he took several armorer courses for
25 common gun types and manufacturers and went on over two dozen tours of manufacturing
26 facilities. (*Id.* at 7). Johnson has also been a provisional member of AFTE since October 2014, and
27
28

1 he testified that he should be a full member by the end of 2019.⁹ As an expert on firearms, he has
2 testified on multiple occasions in state court since 2013.

3 During the *Daubert* hearing, Johnson testified confidently and demonstrated that he had a
4 comprehensive and detailed understanding of the field of firearm and tool mark examination.
5 Given his substantial training and experience, there is little doubt that he is competent to testify.
6 See *U.S. v. Williams*, 506 F.3d 151, 161 (2d Cir. 2007) (holding that a firearm examiner was
7 properly qualified to testify because, *inter alia*, she had 12 years of experience, had substantial
8 hands-on training, attended seminars on firearms identification, had previously testified as an
9 expert witness, and had examined approximately 2,800 different types of firearms); *U.S. v.*
10 *Monteiro*, 407 F.Supp.2d 351, 373 (D. Mass. 2006) (police sergeant was qualified as a ballistics
11 expert despite lack of college degree and scientific training when he had on the job training by an
12 experienced examiner, attended armorer schools, conducted hundreds of examinations, and passed
13 a proficiency test).


14 IV. Conclusion

15 IT IS THEREFORE ORDERED that defendant's motion to exclude the testimony of
16 Steven Johnson (ECF No. 51) is **DENIED**.

17 IT IS FURTHER ORDERED that Johnson is competent to testify at trial in the field of
18 firearm and tool mark examination.

19 IT IS SO ORDERED.

20 DATED this 13th day of May, 2019.

21
22 
23 LARRY R. HICKS
24 UNITED STATES DISTRICT JUDGE
25
26

27 ⁹ According to AFTE's website, a provisional member has the same privileges and responsibilities as a full
28 member save for the fact that they cannot be elected to office positions or vote in the elections. *Membership Requirements*, THE ASSOCIATION OF FIREARM AND TOOL MARK EXAMINERS, available at <https://afte.org/membership/membership-requirements> (last visited May 1, 2019).